



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/608,178 | 06/27/2003 | Douglas Allen Riddle | 9D-HL-19990 | 8216 |

7590 06/03/2005

John S. Beulick
Armstrong Teasdale LLP
Suite 2600
One Metropolitan Square
St. Louis, MO 63102

EXAMINER

PASCHALL, MARK H

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

3742

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-------------------------------|-------------------------------|--|
| Office Action Summary | Application No. 10/608,178 | Applicant(s) RIDDLE ET AL. | |
| | Examiner Mark H. Paschall | Art Unit 3742 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-11,13-17,19-23 and 25-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 22,23 and 25-30 is/are allowed.
- 6) ☒ Claim(s) 1,2,4-11,13-17,19-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Continued Prosecution Application

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1,2,4-11,13-17,19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keuleman et al in view of Hikino et al, taken further with Clements et al or Payne et al. Claims are unpatentable for the same reasons set forth on page 3 in the prior office action. Note that Keuleman et al teach both temperature and Hikino et al teach temperature and humidity control as claimed.

Allowable Subject Matter

Claims 22,23,25-30 are allowed.

Applicant's arguments filed 02-28-05 have been fully considered but they are not persuasive. Applicant's remarks advance that Keuleman et al neither describes or suggests a method of limiting current as recited in claim 1. Applicant should note that the term limiting current , as set forth in the instant claims , could merely comprise turning off the device, which also is relative to the term, "stopping and reproviding of a sine wave". Basically every temperature control device that regulates temperature using proportional, PI or PID control , does stop and reproved the sin wave. No

patentable weight is given to this term. The claims have been amended to set forth maintaining of a temperature /humidity relationship. No mention of humidity (or moisture) sensing is set forth in the independent claims. Applicant should note that lacking such sensing, if the humidity of the ambient conditions around a dryer remain constant, then a control scheme based solely on temperature control would meet the claim limitations. Hikino et al also teaches use of humidity sensing, and use of the same is basically standard in the dryer art today. Hikino et al also use thermostatic control of the temperature and use of humidity sensing in combination effectively teaches Applicants claimed invention, barring further description of what type of temp./humidity relationship is desired, is thus met by the Hikino et al system. . The claims are silent as to the nature of this temp./humidity relationship. In view of the Hikino et al teaching the artisan would have been properly motivated to use humidity control in addition to temperature control, in the Kueleman et al system, given the widespread use of the same in conventional clothes dryers, and lack of the type of relationship set forth in the instant claims. Applicants claims also set forth the reprovinding of the sine wave every other cycle , at zero cross. Once again, this control scheme is standard zero cross control. The patents to Payne et al and Clements et al evidence that every other wave, every fourth wave, every eighth wave, etc., can be withheld or supplied, to effect the desired control level. Figure 3 in Payne et al clearly shows zero cross control, per se, and power setting 6 in Figure 3 show every other cycle supplied, as claimed. The artisan would have found it merely "routine" to adapt such control into conventional power supply controllers. Applicant argues on page 13 in

the remarks that obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching. The Examiner is not using the claimed invention as an instruction manual to piece together the teachings of the prior art, as set forth on pages 13 and 14 in the remarks. The pertinent question is just what one of ordinary skill in the art would find obvious in the prior art teachings.

Payne et al makes it very clear that conventional switching systems fail to provide adequate control, which prevents excessive current use. See column 2. The cycle control set forth in figure 3 in Payne et al is very rapid and leads to much more accurate control. The Examiner submits that one of ordinary skill in temperature control would be fully aware that using cycle control as set forth in Payne et al or Clements et al, would lead to more rapid switching and hence more accurate control of the drying process. Integral control is notoriously common in the art and the Examiner is merely using such recognition for combining the references, not using Applicants invention as an instruction manual, as asserted.

On page 14-15 in the remarks Applicant mentions that Keuleman et al maintains a temperature relationship and not a temperature/humidity relationship, as claimed. Hikino et al provides proper motivation for the artisan to combine humidity control in combination with temperature control. Hikino et al has both thermostatic control of the temperature and control of the humidity. Since the humidity control occurs concurrently with the temperature control, it is very clear that a relationship exists between the two. Since Applicants own claims are silent as to just what kind of relationship is disclosed, the teachings of Hikino et al are sufficient for showing a basic humidity/temp.

Art Unit: 3742

relationship. AS per dependent claim 15, the artisan would have found use of a moisture sensor in lieu of humidity sensor, as a choice that is both obvious and dependent on the end use of the device. Claim 16 brings the concept of a "cavity configured to hold articles to be dried". The Examiner has never seen a dryer that did not have this feature.

In view of the above, the artisan is well aware of the benefits of both integral cycle control and combining humidity sensing in combination with temperature control, and would have found the claimed invention, obvious, in view of the prior art applied.

Conclusion

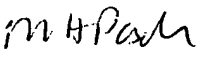
THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark H. Paschall whose telephone number is 703 308-1642. The examiner can normally be reached on 7am - 3pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on (703) 305-5766. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Mark H Paschall
Primary Examiner
Art Unit 3742

mp